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JOHN S. PRATT, ESQ KILPATRICK STOCKTON, LLP 1100 PEACHTREE STREET ATLANTA, GA 30309			EXAMINER YOON, TAE H	
			ART UNIT	PAPER NUMBER
			1714	

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**MAILED**  
**MAR 20 2007**  
**GROUP 1700**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/852,855  
Filing Date: May 10, 2001  
Appellant(s): BERARD, RAYMOND A.

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Bruce D. Gray  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed December 28, 2006 appealing from the Office action mailed August 28, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

This appeal involves claims 1-13 and 15-21.

Claim 14 had been canceled.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The amendment after final rejection filed on December 4, 2006 has been entered.

**(5) Summary of Claimed Subject Matter**

Art Unit: 1714

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,036,726

Yang et al

3-2000

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Claims 1-9, 12, 13, 15, 16 and 18-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the**

**inventor(s), at the time the application was filed, had possession of the claimed invention.**

This is NEW MATTER rejection.

The recited "below 155°C" in claim 1, and dissolution times of "45 minutes or less" and "less than 45 minutes" in claims 1 and 21, "37 minutes or less" in claim 18, "23 minutes or less" in claim 19 and "15 minutes or less" in claim 20 do not have support in the originally filed specification contrary to appellant's assertion.

**Claims 1-13 and 15-21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the dissolution time of 45, 37, 23 and 15 minutes, does not reasonably provide enablement for the dissolution time of 45, 37, 23 and 15 minutes or less. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.**

The recited "15 minutes or less" encompasses 30 seconds, for example, and appellant failed to show that said 30 seconds enable the invention. There is no showing in the specification that appellant has achieved a dissolution of a nylon-containing material during said 30 seconds. Given the absence of any direction provided by the inventor or the existence of working examples at any dissolution time of 45 minutes or less, it would have required undue experimentation to make an use the invention of claims 1-13 and 18-21. In re Wands, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) and MPEP 2164-01(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-13 and 15-21 are rejected under 35 U.S.C. 103(a) as obvious over Yang et al (US 6,036,726).**

Yang et al disclose a process for recycling colored polyamide (nylon) material in abstract. Said process comprises the steps of (a) contacting solid colored polyamide (nylon) material with an organic solvent composition at a temperature effective to dissolve the polyamide (nylon) material, thereby forming a solution containing colorant and dissolved polyamide (nylon); (b) separating insoluble materials from dissolved polyamide (nylon) material; and (c) cooling the dissolved polyamide (nylon), thereby causing nylon to precipitate in claim 27.

The temperature for said dissolution is taught as 140-220°C at col. 7, line 1 and in claim 3 overlapping the instant temperature. Suitable pressures are taught as between about atmospheric pressure and about 300 psig at col. 7, lines 2-4. Use of an inert gas such as nitrogen or argon in order to obtain an elevated pressure is also taught at col. 7, lines 4-6. Tables 5-8 show 60-90wt.% of alcohol in water.

Examples of Yang et al show a mixture of water and alcohol, and example 10 shows that ethylene glycol was not a good solvent for nylon 6,6 (col. 12, lines 59-60). Also, example 10 uses one hour at a temperature from 154-163 °C and a pressure of 250 psig.

Yang et al teach various residence times such as 0.5-20 minute, for solvating the colored nylon at col.7, lines 9-25.

The instant claims recite "a pressure higher than the equilibrium vapour pressure of the alkanol-containing solvent at the elevated temperature", but claims do not specify how high that pressure would be. Thus, 0.001 psig higher than the equilibrium vapour pressure would meet the invention and such pressure change would constantly occur inherently in a pressure vessel since it is in a dynamic state (constant change of equilibrium vapour pressure to non-equilibrium vapour pressure back and forth), not a steady state.

It would have been obvious to one skilled in the art at the time of invention to utilize the instantly claimed temperature such as 154 °C or 140°C and pressure higher than 250 psig by introducing an inert gas in example 10 of Yang et al since Yang et al teach employing 140-220°C and 300 psig, and a higher pressure would yield a shorter dissolution time and since Yang et al teach various residence times such as 0.5-20 minute, and furthermore, choosing a temperature, pressure and dissolution time within the range disclosed by Yang et al is a *prima facie* obviousness absent showing otherwise

Claim 13 further recites that the pressure head yields a pressure higher than the equilibrium vapor pressure of a solvent over Yang et al. However, Yang et al teach employing a pressure vessel in order to get an elevated pressure, and thus a pressure vessel having a pressure head is an obvious modification since a solvent entering from

Art Unit: 1714

a (pressure) head would have a higher contact with a nylon than that entering from the said or bottom of a pressure vessel.

### **(10) Response to Argument**

Appellant points to page 5, lines 10-11 and page 6, lines 27-28 for the support, but the examiner disagrees with such assertion since one must read the context, and the recited temperatures below 160°C on said page 5 is related to the proceeding sentence, [T]he pressure vessel is heated to a temperature of about 130°C to about 155°C, more particularly to about 145°C, and held at this temperature for a period of time sufficient to dissolve the desired yield of nylon. Surprisingly, this use of increased pressure allows operation at temperature below 160°C. Thus, said "temperature below 160°C" means the temperature of about 130°C to about 155°C, not below 155°C encompassing a room temperature, for example. The teaching on page 6, lines 27-28 is related to the teaching on page 5 also. Appellant points various locations of specification for support, but the recited "below 155°C" encompassing 154.5°C or 152°C for example cannot be found. The temperature of 155°C does not support the recited below 155°C. Also, temperature of 150°C, 147°C, 145°C, 143°C and 130°C do not support the recited below 155°C including 154.5°C or 152°C, for example.

The recited dissolution times of "45 minutes or less" and "less than 45 minutes" in claims 1 and 21, "37 minutes or less" in claim 18, "23 minutes or less" in claim 19 and "15 minutes or less" in claim 20 do not have support either since said dissolution times



Art Unit: 1714

of 45 minutes or less encompasses 3 minutes for example. The recited 45, 37, 23 and 15 minutes have support.

The recited "about 145°C" of claim 11 does not have support since 145°C of the sample 8 in example is 145°C not about 145°C. Note that the measurement of a temperature by a thermometer is the exact science, not a rough measurement.

Note that the limitation recited in the specification cannot be read into the claim reciting a broad range.

As discussed above, the recited "15 minutes or less" encompasses 30 seconds, for example, and appellant failed to show that said 30 seconds enable the invention. There is no showing in the specification that appellant has achieved a dissolution of a nylon-containing material during said 30 seconds.

The preferred temperature of 140-220°C at col. 7, line 1 and claim 3 encompasses the instant temperature, and thus choosing such overlapping ranges are obviousness. See *In re Mills*, 477 F2d 649, 176 USPQ 196 (CCPA 1972); Reference must be considered for all that is discloses and must not be limited to preferred embodiments or working examples. Yang et al also teach the use of inert gas or pressure vessel in order to get an elevated pressure at col. 7, lines 4-8, and such use would inherently yield a pressure higher than the equilibrium vapor pressure of a solvent. Also, note that claims 1-8, 10-12 and 15-20 do not recite a particular pressure and thus 0.1 psig higher than the equilibrium vapor pressure of a solvent, for example, would meet the invention, and the teaching of the use of inert gas or pressure vessel would meet the recited pressure. It is well known in chemistry that a higher pressure

Art Unit: 1714

would yield a faster dissolution of a polymer such as nylon in a solvent, and that a pressure vessel found in a laboratory or plant inherently yields a pressure higher than the equilibrium vapor pressure of a solvent, otherwise it would not be called a pressure vessel. Even the use of a pressure vessel in order to shorten (cooking) time is well known to persons without a knowledge of chemistry such as cooks and house wives, and a pressure cooker (vessel) found in kitchen of a home yields a faster cooking than a regular cooker or pot. Yang et al teach that one object of the invention is to avoid any substantial degradation of the polymer during the solvating step at col. 8, lines 54-56 which is same as that of the instant invention (Field of Invention). Thus, the use a the instant higher pressure in Yang et al is well warranted.

With respect to the claimed dissolution time of claims 18-21, Yang et al teach various residence times such as 0.5-20 minute, and furthermore, choosing a temperature, pressure and dissolution time within the range disclosed by Yang et al is a *prima facie* obviousness and appellant failed to show otherwise.

With respect to the sufficient dissolution time for the desired yield of nylon, Yang et al teach such modification at col. 7, lines 9-25 contrary to appellant's assertion.

With respect to claim 4, appellant also points example 29 for the use of ethylene glycol, but other examples and claim 14 teach an aqueous solution of 1-butanol and ethanol since they are inexpensive (col. 6, line 48-50). Thus, the use of glycol would be

Art Unit: 1714

discouraged, and example 10 shows that ethylene glycol was not a good solvent for nylon 6,6.

With respect to the pressure head yields a pressure higher than the equilibrium vapor pressure of a solvent in claim 13, the examiner has stated that Yang et al teach employing a pressure vessel in order to get an elevated pressure, and thus a pressure vessel having a pressure head is an obvious modification, and choosing a temperature and dissolution time within the range disclosed by Yang et al is a *prima facie* obviousness absent showing otherwise contrary to appellant's assertion. Appellant asserts that the use of a pressure head in Yang et al would not be obvious and that the contact time of the solvent and the nylon is not dictated by the location of the pressure head, but by the flow rate of the solvent. Said statement by appellant, the contact time of the solvent and the nylon is not dictated by the location of the pressure, but by the flow rate of the solvent, alone shows no criticality of the location of the pressure head. Note that there is at least one position for the pressure head on the pressure vessel, and any pressure head of the pressure vessel taught by Yang et al would at least in part meet the claim 13 since Yang et al teach the pressure (250 psi) taught by the invention. Appellant asserts that the "pressure vessel" does not indicate that high pressure is necessarily being used in the process, but such assertion has no probative value since Yang et al teach a pressure of 250 psi, and said 250 psi indicates the high pressure process.

Art Unit: 1714

With respect to claim 17, Yang et al teach employing an inert gas, and thus use of an inert gas would yield a higher pressure yielding a shorter dissolution time and since Yang et al teach various residence times such as 0.5-20 minute,

With respect to claim 18-20, Yang et al teach various residence times such as 0.5-20 minute, and thus modification of a pressure in order to obtain such residence times would be obvious contrary to appellant's assertion.

With respect to claim 21, choosing a temperature and pressure within the disclosure of Yang et al is obvious modification contrary to appellant's assertion.

With respect to unexpected result in 1.132 declaration filed on March 11, 2005, the scope of the claimed invention (a pressure higher than equilibrium vapour pressure) is broader than the showing in said declaration (425-460 psig). Note that the minimum pressure is recited in claim 9, for example, is about 250 psig, not 425-460 psig used in the test. Also, the temperature of 113°C used in said declaration is not disclosed in the specification, and the page 5 teaches "about 130°C to about 155°C" as discussed above. Also, submission of said 1.132 declaration by appellant is an evidence that the examiner has established a *prima facie* obviousness.

#### **(11) Related Proceeding(s) Appendix**

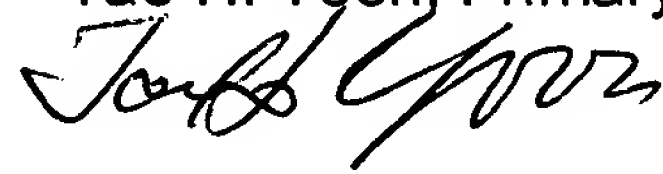
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

THY/March 12, 2007

Tae H. Yoon, Primary Examiner



Conferees:

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